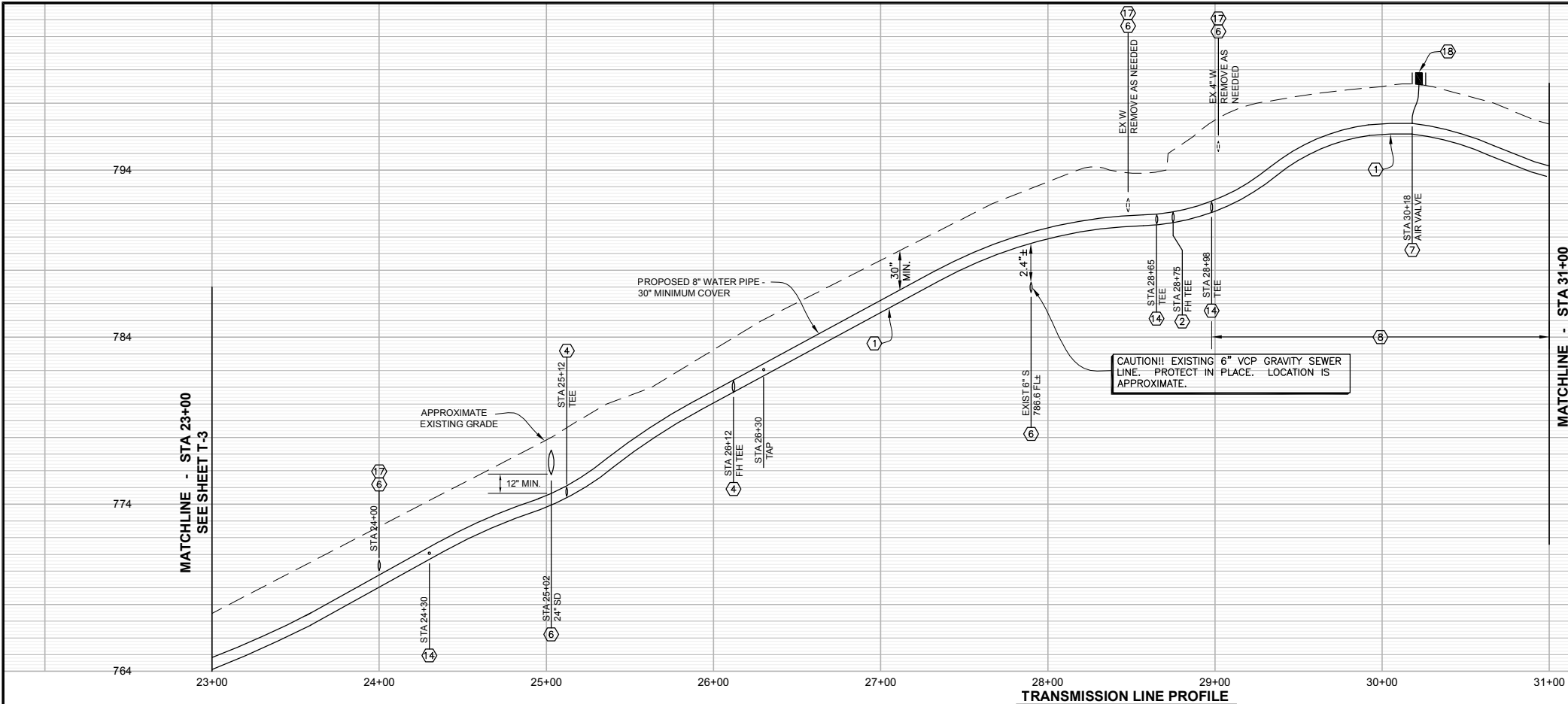

FINAL ENVIRONMENTAL ASSESSMENT

*SANTA BARBARA COUNTY PARKS WATER SYSTEM UPGRADES AT LAKE
CACHUMA CAMPGROUND*

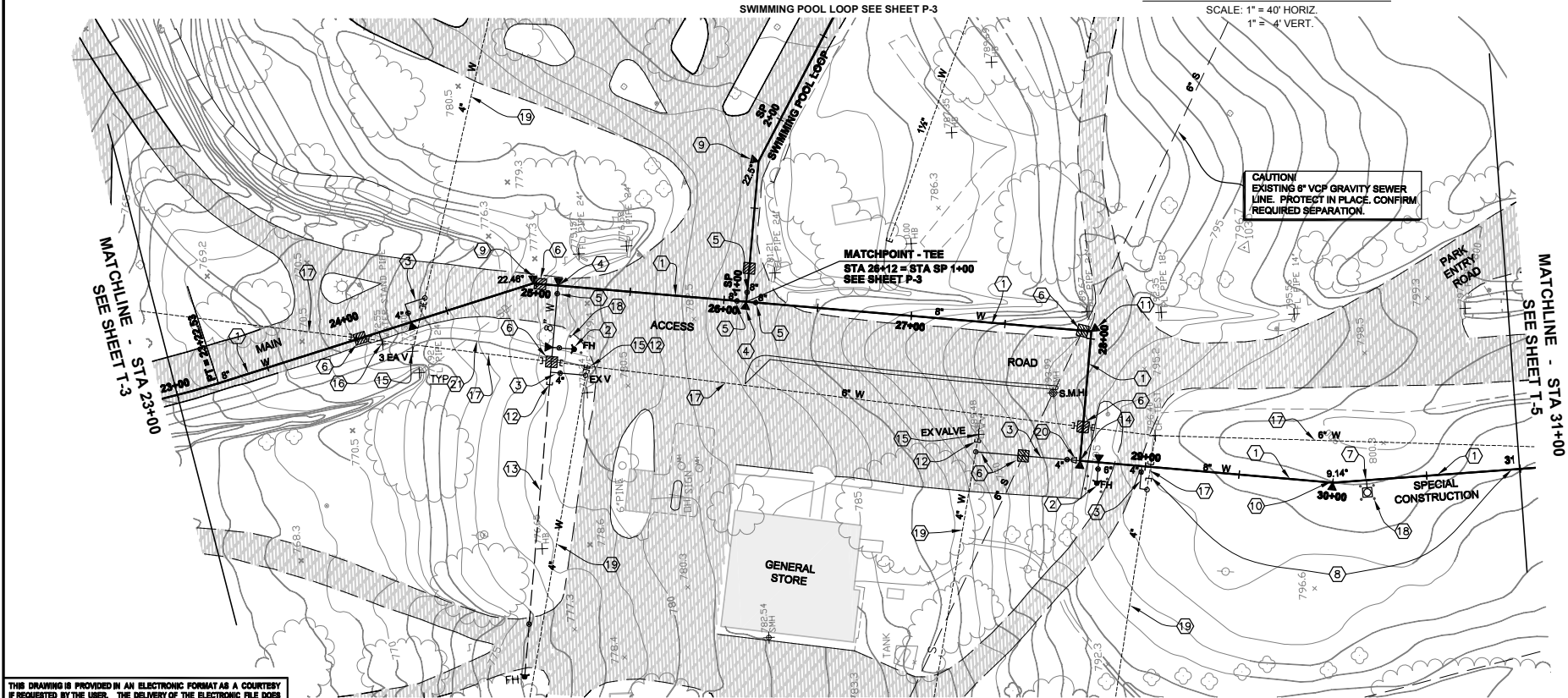
Appendix A
Preliminary Project Designs Set 5

June 2010

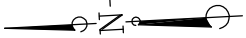
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TRANSMISSION LINE PROFILE
SCALE: 1" = 40' HORIZ.
1" = 4' VERT.



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SCALE: 1" = 40'

GRAPHIC SCALE



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FLOWERS & ASSOCIATES, INC.

CIVIL ENGINEERS

201 N. Calle Cesar Chavez, Suite 100 Santa Barbara, CA 93103

Telephone (805) 966-2224

BY:

Eric L. Flavel
PROJECT ENGINEER

DATE:

5/20/09

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COUNTY OF SANTA BARBARA

COUNTY PARKS

610 Mission Canyon Road
Santa Barbara, CA 93105

Design: ELF

Check: BS

Drawn: SS

Project Engineer:

Date:

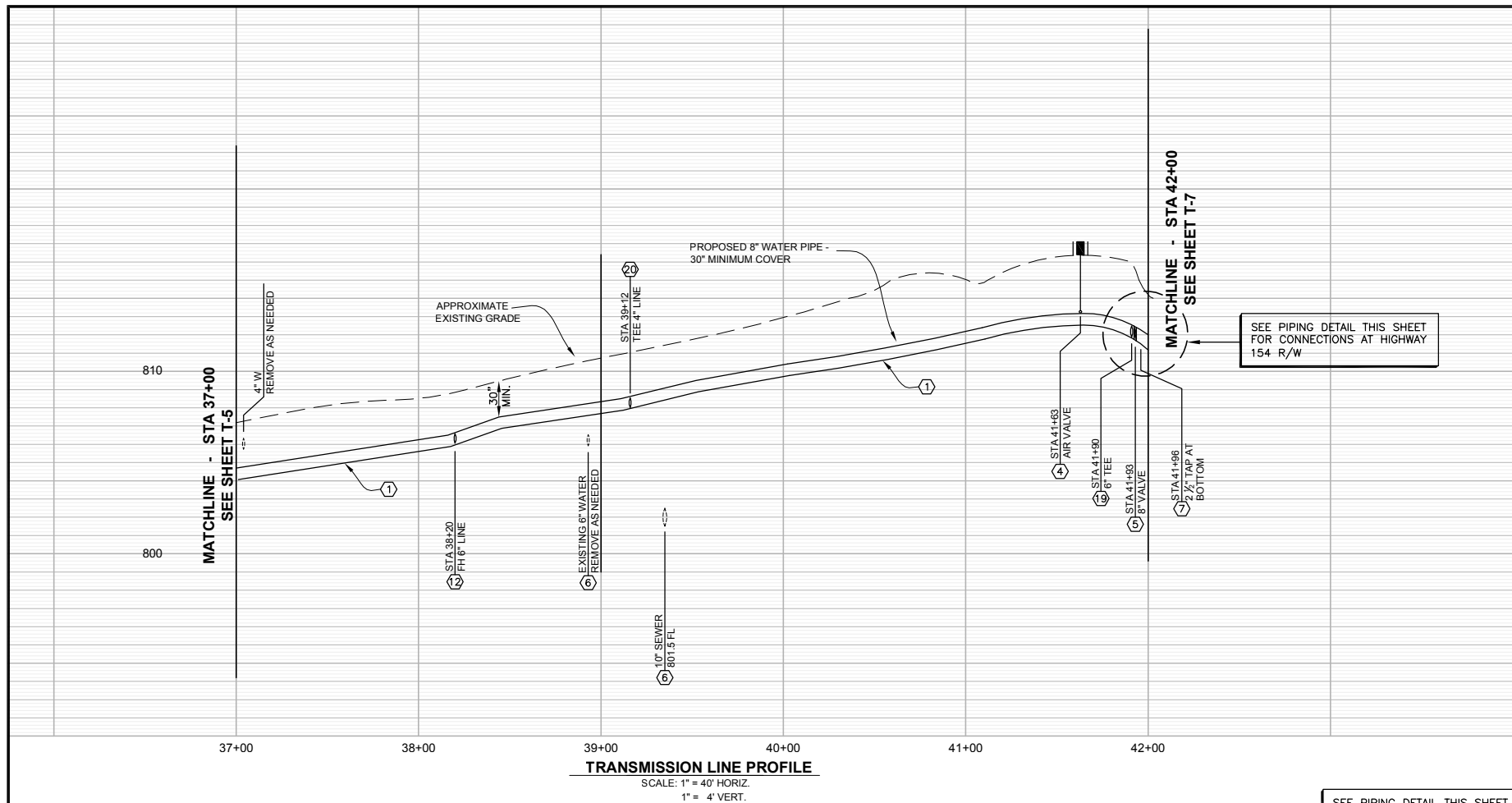
**TRANSMISSION PIPELINE
PLAN AND PROFILE**

LAKE CACHUMA WATER STORAGE AND
DISTRIBUTION SYSTEM IMPROVEMENTS
COUNTY OF SANTA BARBARA, CALIFORNIA

T-4

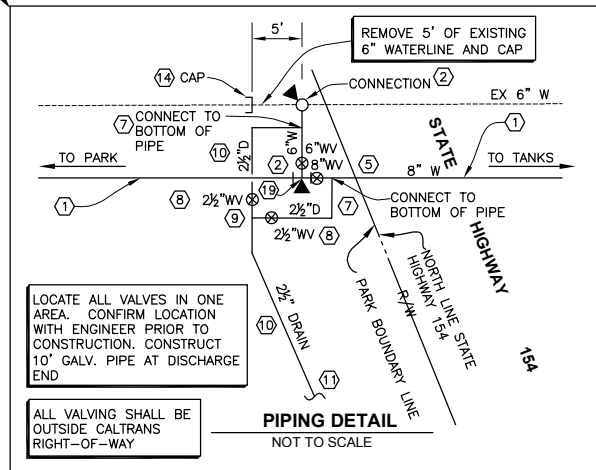
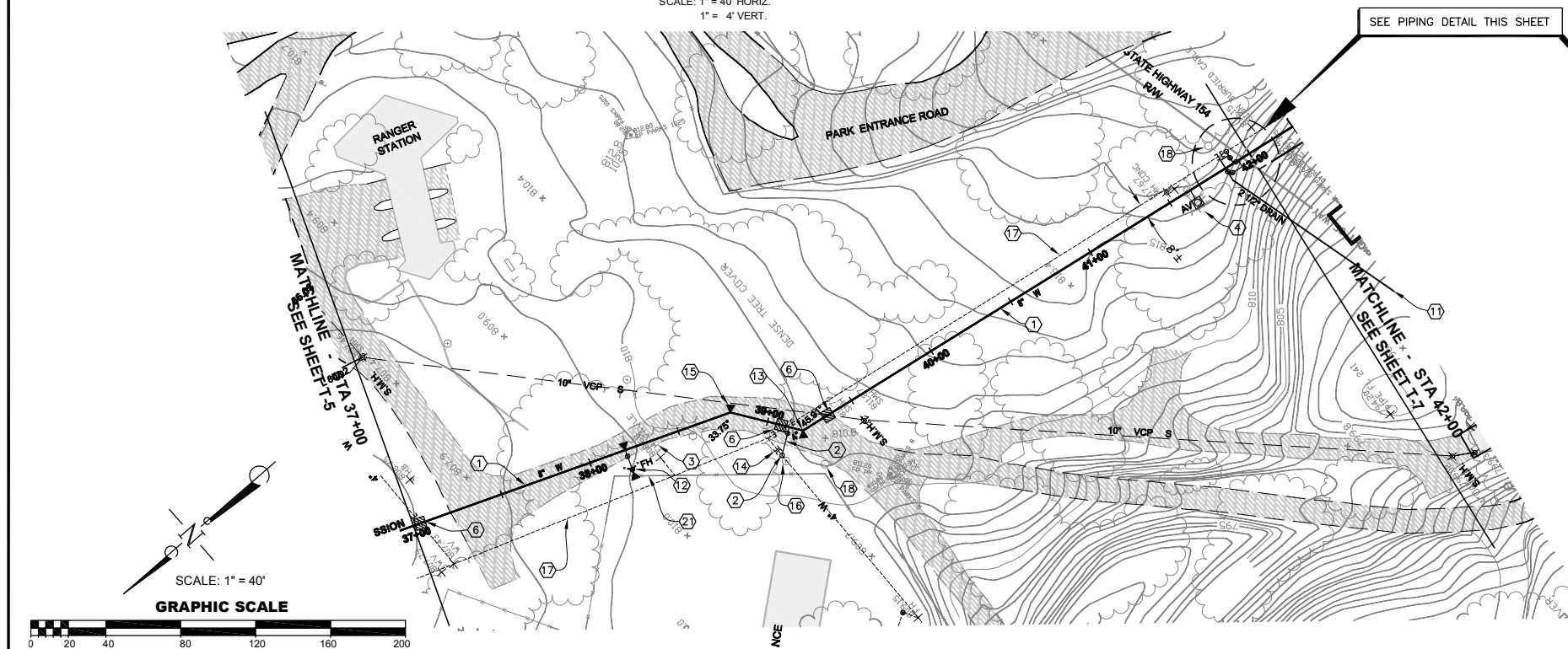
SHT. 12 OF 35

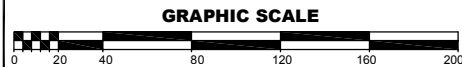
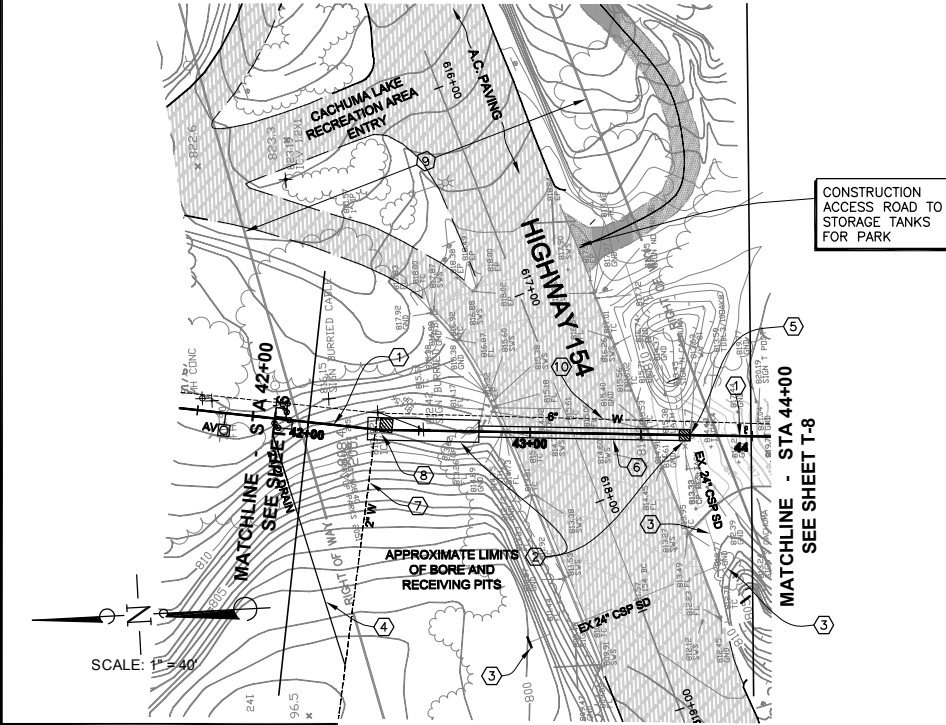




- SPECIFIC CONSTRUCTION NOTES THIS SHEET:**

 - 1 CONSTRUCT 8-INCH PVC WATER PIPE, CLASS 200, 30 INCHES MINIMUM COVER, PER TRENCH DETAIL 20 ON SHEET CD-2.
 - 2 CONSTRUCT CONNECTION TO EXISTING DISTRIBUTION LINE, SIZE AS SHOWN, PER DETAIL 37, SHEET CD-3.
 - 3 REMOVE EXISTING FIRE HYDRANT AND ASSEMBLY AND DELIVER TO COUNTY.
 - 4 CONSTRUCT 1-INCH AIR VALVE ASSEMBLY PER DETAIL 34, SHEET CD-3.
 - 5 CONSTRUCT 8-INCH GATE VALVE PER DETAIL 25, SHEET CD-2.
 - 6 POT HOLE LOCATION OF EXISTING CONDUIT AND REPORT FINDINGS TO ENGINEER PRIOR TO CONSTRUCTION.
 - 7 CONSTRUCT TAP FOR 2 ½-INCH DRAIN PIPE PER DETAIL PER DETAIL 35, SHEET CD-3.
 - 8 CONSTRUCT 2 ½-INCH BALL VALVE PER DETAIL 35 ON SHEET CD-3.
 - 9 CONSTRUCT 2 ½" x 2 ½" x 2 ½" TEE.
 - 10 CONSTRUCT 2 ½-INCH DRAIN PIPE PER PIPING DETAIL 35, SHEET CD-3.
 - 11 DAYLIGHT 2 ½-INCH DRAIN PIPE AND CONSTRUCT 10 SQUARE FEET OF RIP RAP OUTLET PER DETAIL 7, SHEET CD-1.
 - 12 CONSTRUCT 6-INCH FIRE HYDRANT ASSEMBLY PER DETAILS 30 AND 32, SHEET CD-3.
 - 13 CONSTRUCT 45° BEND AND THRUST BLOCK PER DETAIL 24, SHEET CD-2.
 - 14 CONSTRUCT END CAP AND THRUST BLOCK PER DETAIL 24, SHEET CD-2.
 - 15 CONSTRUCT 22 ½" AND 11 ½" BENDS AND THRUST BLOCK PER DETAILS 24 AND 26 ON SHEET CD-2.
 - 16 REMOVE VALVE.
 - 17 ABANDON PIPE PER SPECIFICATIONS.
 - 18 PROTECT UTILITY POLE.
 - 19 CONSTRUCT 8"x8"x6" TEE FOR CONNECTION TO EXISTING 6" WATER TRANSMISSION LINE.
 - 20 CONSTRUCT 8"x8"x4" TEE AND VALVE FOR EXISTING 4" DISTRIBUTION LINE PER DETAIL 37 ON SHEET CD-3.
 - 21 PROTECT EXISTING FENCE. ADJUST LOCATION OF FIRE HYDRANT TO CLEAR FENCE.





NO.	DESCRIPTION	DATE	APPROVED
REVISIONS			

BY: [Signature]
PROJECT ENGINEER

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COUNTY OF SANTA BARBARA

COUNTY PARKS

610 Mission Canyon Road
Santa Barbara, CA 93105

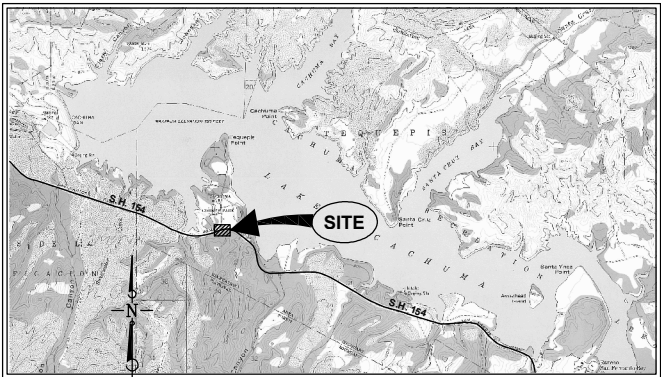
Design: ELF	Check: BS
Drawn: SS	
Project Engineer:	
Date:	

BORING UNDER HWY 154, MILEPOST 14.7

PLAN, PROFILE AND DETAILS

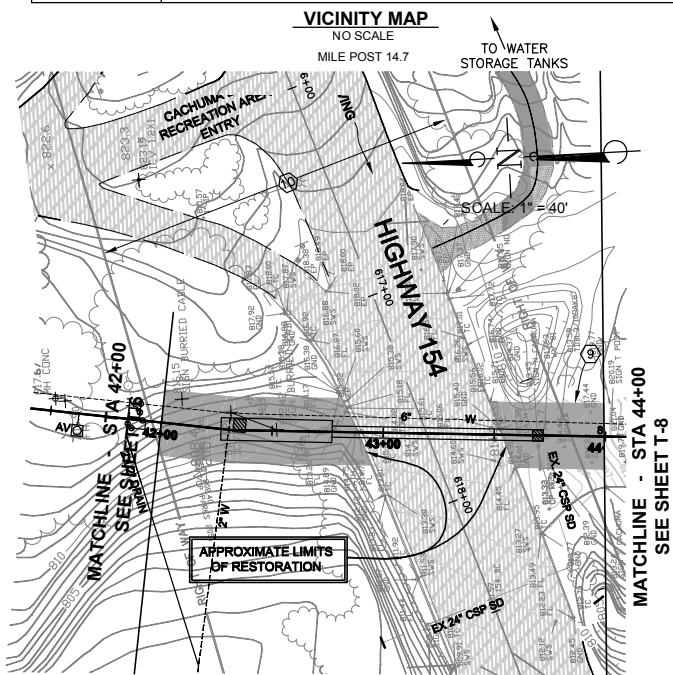
LAKE CACHUMA WATER STORAGE AND
DISTRIBUTION SYSTEM IMPROVEMENTS
COUNTY OF SANTA BARBARA, CALIFORNIA

SHT. 15 OF 35



- A. CONTRACTOR SHALL PERFORM ALL CONSTRUCTION WITHIN CALTRANS RIGHT-OF-WAY IN ACCORDANCE WITH THE CALTRANS PERMIT ISSUED FOR THIS PROJECT.
- B. PROTECT EXISTING 6-INCH WATER PIPE IN VICINITY OF BORE AND RECEIVING PITS SHORING AS NECESSARY.
- C. *POTHOLE STORM DRAIN. PREPARE SKETCH SHOWING RELATIVE ELEVATIONS OF ROAD SURFACE, EXISTING STORM DRAIN AND PROPOSED 8" WATERLINE AND CASING. CONFIRM ELEVATION AND CLEARANCE WITH PROPOSED 8" WATERLINE. ADJUST WATERLINE ELEVATION FOR 40" CLEARANCE ABOVE OR BELOW STORM DRAIN. CONTRACTOR SHALL INCLUDE ALL COSTS FOR GOING BELOW STORM DRAIN IN HIS BID.

1. CONSTRUCT 8-INCH PVC WATER PIPE, CLASS 200, 30 INCHES MINIMUM COVER, PER TRENCH DETAIL 20 ON SHEET CD-2.
2. APPROXIMATE LIMITS OF BORE PITS (APPROXIMATELY 10-FEET BY 40 FEET FOR ENTRY PIT, AND 5-FEET BY 5-FEET FOR RECEIVING PIT). CONTRACTOR SHALL CONFIRM LIMITS WITH ENGINEER PRIOR TO EXCAVATION. BORE PIT SIDE SLOPE SHALL BE STABILIZED.
3. CONTRACTOR SHALL LOCATE STORM DRAIN SYSTEM INCLUDING PIPE, INLETS AND OUTLET, AND PROTECT IN PLACE.
4. SEE SHEET T-6 FOR PIPING LAYOUT.
5. ENCASE EXISTING 24-INCH STORM DRAIN PIPE WITH 2-SACK SLURRY IN VICINITY OF RECEIVING PIT.
6. CONSTRUCT 14" CASING PER DETAIL A THIS SHEET.
7. PROTECT EXISTING 2" WATER PIPE IN PLACE OR RELOCATE AS NECESSARY FOR BORE PIT OPERATIONS. CONNECT TO PROPOSED WATERLINE AND CAP AND ABANDON CONNECTION TO EXISTING 6" WATERLINE.
8. POTHOLE LOCATION OF EXISTING CONDUIT AND REPORT FINDINGS TO ENGINEER PRIOR TO CONSTRUCTION. PROTECT CONDUIT.
9. CONTRACTOR TO COMPLY WITH STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION "ENCROACHMENT PERMIT PROVISIONS" FOR ALL WORK WITHIN STATE R/W. ALL WORK WITHIN STATE R/W MUST BE INSPECTED BY THE STATE PERMIT ENGINEER OR HIS AGENT. SEE ENCROACHMENT PERMIT DOCUMENTATION FOR ADDITIONAL WORK ITEMS, BONDING AND INSURANCE REQUIREMENTS.
10. PROTECT EXISTING 6" WATER TRANSMISSION LINE TO CACHUMA PARKS RESERVOIR NO. 1 IN PLACE AS SHOWN.

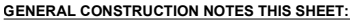
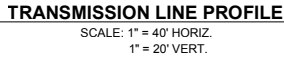


APPROXIMATE LIMITS OF RESTORATION. CONTRACTOR SHALL RESTORE ALL AREAS DISTURBED BY HIS OPERATION TO THE ORIGINAL GROUND CONTOUR. CONTRACTOR SHALL HYDROSEED ALL DISTURBED AREAS WITH THE FOLLOWING APPROVED NATIVE SEED MIXTURE AT THE MINIMUM RATE OF 75 POUNDS PER ACRE:

NATIVE HYDROSEED MIXTURE
ACHILLEA, SPECIES / YARROW
ESCHSCHOLZIA CALIFONICA / CALIFORNIA POPPY
LOTUS SCOPARIUS / DEERWEED
LUPINUS SPECIES / ANNUAL LUPINE
BROMUS ARIZONICUS / ARIZONA BROMEGRASS
JUNCUS PATENS / WIRE GRASS
MILICA CALIFORNICA / COAST RANGE MELICA

HYDROSEED SHALL BE IN ACCORDANCE WITH SECTION 20-3.04 SEEDING AND FERTILIZING OF THE CALTRANS STANDARD SPECIFICATIONS

RESTORATION PLAN

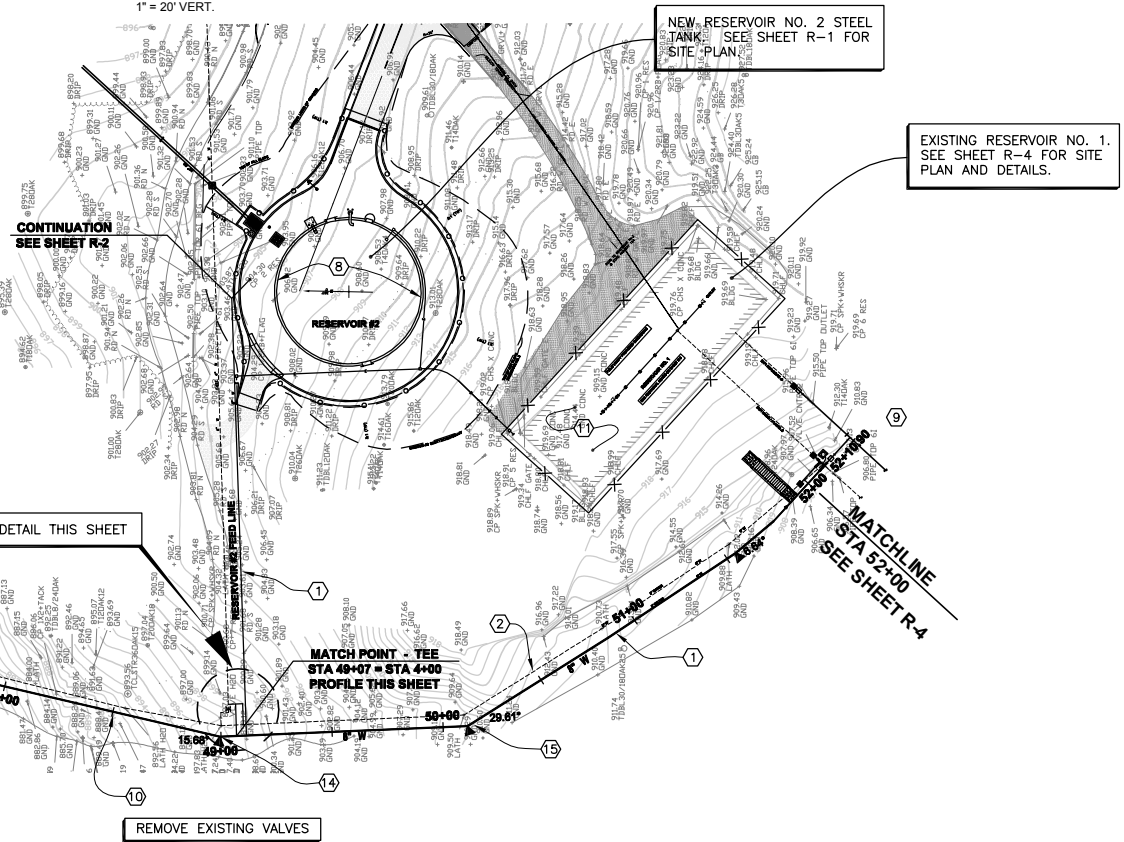
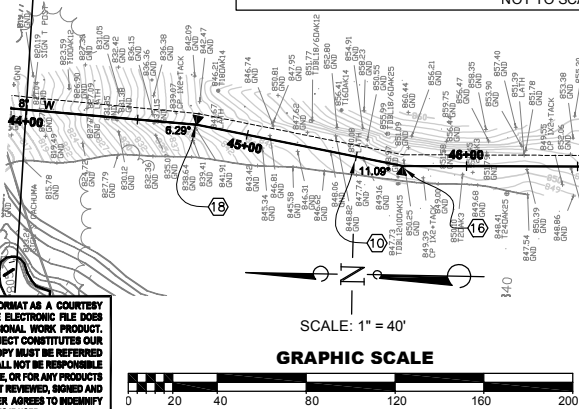


GENERAL NOTES:

- A. NOTE THAT SCALE ON THIS SHEET IS 1 INCH = 40 FEET, DIFFERENT FROM SCALE OF SHEETS T-1 THROUGH T-6.

SPECIFIC CONSTRUCTION NOTES THIS SHEET:

- 1 CONSTRUCT 8-INCH PVC WATER PIPE, CLASS 200, 30 INCHES MINIMUM COVER, PER
TRENCH DETAIL 20 ON SHEET CD-2.
- 2 PROTECT EXISTING WATER PIPE IN PLACE.
- 3 CONSTRUCT 8"x6 DI CONCENTRIC REDUCERS (FLXL) PER PIPING DETAILS 24 AND 26 ON
SHEET CD-2.
- 4 CONSTRUCT CONNECTION TO EXISTING DISTRIBUTION LINE. SIZE AS SHOWN, PER DETAIL
37, SHEET CD-3.
- 5 CONSTRUCT 8-INCH GATE VALVE (FLXL) PER DETAIL 25, SHEET CD-2.
- 6 CONSTRUCT 8" x 8" (FLXLFLX) TEE AND THRUST BLOCK PER PIPING DETAILS 24 AND
26 ON SHEET CD-2.
- 7 CONSTRUCT 6" x 6" x 6" TEE (FLXLFLX) AND THRUST BLOCK PER PIPING DETAILS 24 AND
26 ON SHEET CD-2.
- 8 SEE SHEET R-1 FOR RESERVOIR PLANS AND DETAILS, AND CONTINUATION OF WATERLINE
TO RESERVOIR.
- 9 SEE SHEET R-4 FOR GRADING DETAILS AND CONNECTION TO EXISTING RESERVOIR
DETAILS.
- 10 CONSTRUCT TRENCH PLUG PER DETAIL 21 ON SHEET CD-2 AT LOCATIONS SHOWN ON
THE PLAN AND NOT TO EXCEED 150-FEET BETWEEN HIGHWAY 154 CROSSING AND THE
RESERVOIR.
- 11 SEE SHEET R-4 FOR IMPROVEMENTS TO EXISTING RESERVOIR.
- 12 CONSTRUCT END CAP AND THRUST BLOCK PER DETAIL 24, SHEET CD-2.
- 13 CONSTRUCT 6" DI PIPE SPOOL (FLXL) FOR THIS CONNECTION.
- 14 CONSTRUCT 22 1/2" BEND AND THRUST BLOCK PER DETAIL 24, SHEET CD-2.
- 15 CONSTRUCT COMBINATION 22 1/2" AND 5 1/4" BEND AND THRUST BLOCKS PER DETAIL 24,
SHEET CD-2.
- 16 CONSTRUCT 11 1/4" BEND AND THRUST BLOCK PER DETAIL 24, SHEET CD-2.
- 17 CONSTRUCT 90" BEND (FLXL) AND THRUST BLOCK PER DETAIL 24, SHEET CD-2.
- 18 CONSTRUCT 5 1/8" BEND AND THRUST BLOCK FOR DETAIL 24, SHEET CD-2.
- 19 CONSTRUCT 8" DI PIPE SPOOL (FLXL) FOR THIS CONNECTION.



NO.	DESCRIPTION	DATE	APPROVED
REVISIONS			



FLOWERS & ASSOCIATES, INC.
CIVIL ENGINEERS
Calle Cesar Chavez, Suite 100 Santa Barbara, CA 93103
Telephone (805) 966-2224

BY: [Signature]
PROJECT ENGINEER

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COUNTY OF SANTA BARBARA

COUNTY PARKS

610 Mission Canyon Road
Santa Barbara, CA 93105

Design: ELF	Check: BS
Drawn: SS	
Project Engineer:	
Date:	

TRANSMISSION PIPELINE PLAN AND PROFILE

LAKE CACHUMA WATER STORAGE AND
DISTRIBUTION SYSTEM IMPROVEMENTS
COUNTY OF SANTA BARBARA, CALIFORNIA

T-8

SHT. 16 OF 35